

Title: Second Language Relative Clause Acquisition: An Examination of Cross-Linguistic Influences

Name: Yuh-Fang Chang

Affiliation: National Chung Hsing University

Abstract

English is a Right Branching Direction (RBD) language in which relative clauses appear to the right of the head noun. In contrast, Chinese primarily relies on a Left Branching Direction (LBD) in which relative clauses premodify the head. Many studies have provided evidence that the differences in principal branching directions between the two languages often cause difficulties in acquiring complex syntax (e.g., Flynn, 1984; Flynn and Espinal, 1985). However, most studies concerning the cross-linguistic influences in relative clause acquisition compare English with languages other than Chinese. Little research has been done to investigate the extent to which the relative clauses produced by Chinese learners of English are influenced by the difference in branching direction. The purpose of the present study is to analyze and describe the difficulties that Chinese learners of English encounter in acquiring the relative clauses. A total of 237 English-major freshmen participated in the study. One written composition from each participant was collected. In addition, a 44-item-multiple-choice test on relative clauses was administered. Data were analyzed in terms of: 1) the total number of relative clauses in each pattern, and 2) the number of errors produced in each pattern of relative clauses. Evidence of cross-linguistic influence was found in both areas.

Keywords: language transfer, relative clauses, Chinese, English

INTRODUCTION

The role of the native language in L2 learners' second language acquisition process has received a great deal of scrutiny among researchers. Researchers have studied languages contrastively (contrastive analysis) and examined L2 learners' errors (error analysis) in order to have a better understanding of the influences of L1 on L2 acquisition. While it is now widely accepted that the cross-linguistic influences occur in almost every aspect of language acquisition (i.e., pronunciation, grammar, vocabulary and pragmatics, etc.) and the effects can be both positive and negative (Ellis, 1993; Odlin, 1990), issues surrounding the first/second language relationship continue to attract researchers' interest since many remain unexplored. One such area is the relative clause acquisition of Chinese learners of English.

Whereas several studies have been conducted to examine Chinese and English relative clauses contrastively (e.g., Tang, 1977; Tsao, 1986), research concerning how the differences between Chinese and English relativization affect the acquisition of Chinese learners of English is scant. Many studies have provided evidence that the differences in principal branching directions between the two languages often cause difficulties in acquiring complex syntax (e.g., Flynn, 1984; Flynn and Espinal, 1985). However, most studies concerning the cross-linguistic influences in relative clause acquisition compare English with languages other than Chinese. Little research has been done to investigate the extent to which the relative clauses produced by Chinese

learners of English are influenced by the difference in branching direction. The purpose of the present study is to analyze and describe the difficulties that Chinese learners of English encounter in acquiring the relative clauses.

LITERATURE REVIEW

The research area of the relative clauses has been a fruitful one in the field of second language syntax acquisition. Studies on L2 relative clause acquisition can be characterized by three strands of research: the first examines the “implicational” universals of language; the second investigates the effects of instruction on RC acquisition and the third studies the cross-linguistic influences on L2 relative clause acquisition.

Keenan and Comrie (1977) established a universal implicational relativization hierarchy (subject>direct object>indirect object>object of preposition>genitive>object of comparative), which also reflects the ease of relativization. Much of the research on L2 relative clause acquisition has been conducted to test Keenan and Comrie’s noun phrase accessibility hierarchy hypothesis for second language acquisition (Doughty, 1991; Eckman et al., 1988; Gass, 1979, 1980, 1982; Hamilton, 1994; Hyltenstam, 1984; Pavesi, 1986; Tarallo & Myhill, 1983).

Gass (1979) collected data of (1) free composition, (2) sentence combining, and (3) grammaticality judgments from English learners with a wide range of native languages and found that the extent to which L2 learners find relative clauses difficult

could be predicted on the basis of the accessibility hierarchy. Parallel results were also found by Schachter (1974), Hyltenstam (1984) and Pavesi (1986).

Another line of research focused on the effects of the instruction on relative clause acquisition for L2 learners. Aarts & Schils (1995) compared the production of Dutch learners of English on sentence-combining tasks done before and after three lectures on relative clauses and observed significant effects of instruction on learners' performance of relative clauses.

Gass (1982) investigated the capability of L2 learners to project their knowledge to the relative clauses higher on the accessibility hierarchy. She compared two groups of L2 learners. One was given instruction on subject and direct object relatives, the other on object of preposition relatives. It was found that learners who were taught on object of preposition relatives were able to generalize their knowledge to positions higher on the hierarchy. In the same vein, the study by Eckman et al. (1988) also reported that the experimental groups were able to generalize their learning to relative clauses higher on the accessibility hierarchy.

Doughty (1991) examined the effects of instructional techniques on L2 relative clause acquisition. She compared the rule-oriented instruction with the instruction through a computer program that administered the lessons and practice tasks. It was found that the latter group outperformed the former one in acquiring OP relativization and projecting this knowledge up the hierarchy.

Croteau (1995) collected data from learners of Italian and investigated whether the rule-oriented instruction with or without homework makes differences in learners' acquisition. Three groups were included in the study, each of which was taught to relativize at a different level: the first on DO, the second on OP, and the third on GEN. The results indicated significant gain for the homework groups. However, as to the learners' capacity to generalize their learning to positions higher on the accessibility hierarchy, the study had mixed results: those who received instruction on DO and OP positions projected their knowledge to relative clauses higher on the hierarchy, whereas the GEN group did not. The author speculates the learning contexts (i.e., foreign language context rather than second language context) might be the cause for the unexpected findings and suggests the projection model needs to be tested on other languages.

One other research line concerns the cross-linguistic influences on relative clause acquisition. As aforementioned, most studies concerning the cross-linguistic influences in relative clause acquisition compare English with languages other than Chinese. Chinese and English relative structures differ in several ways. First, the relativizing clause appears to the left of the head NP in Mandarin Chinese whereas it stands to the right of the head NP in English. Second, both languages differ on how relative clauses are marked. While Chinese has only one invariable particle "de", English has several pronominal particles such as *who*, *whom*, *which* and *whose*.

Another difference lies in the occurrence of a pronominal reflex. English does not have these pronouns. In Mandarin Chinese, however, a pronoun is retained in all relativized positions except for subject and direct object positions.

While several studies have been conducted to examine Chinese and English relative clauses contrastively, research concerning how the differences between Chinese and English relativization affect the acquisition of Chinese learners of English is scant. Among the limited amount of studies examining Chinese learners' production of English relative clauses, research findings indicate little L1 interference in the production of Chinese learners' relative clauses.

For example, Schachter (1974) examined the composition data written by Persian, Arabic, Chinese and Japanese learners of English. She observed that Chinese and Japanese groups produced significantly fewer relative clauses than did Persian and Arabic groups. She explained that it is because the native language and target language form relative clauses in strikingly different ways. She also noted that while Chinese and Japanese learners do not use relative clauses with great frequency, they use them with a high degree of accuracy when they do use them.

Liu (1998) investigated English relative clauses produced by junior high school students in Taiwan. The author collected data using picture-identification (PID), ordering (OR), and grammaticality judgment (GJ) tasks and observed little L1 interference in the process of second/foreign language acquisition. On the other

hand, Chiang (1981) examined the errors in English majors' writing and found that interference from L1 is a common, but not major, source of errors. The results showed that subjects misused relative pronouns, such as the use of *that* for *where*, or vice versa.

Yip & Matthews (1991) examined the relative clauses produced by advanced Chinese learners of English and found that the error types resembled those which have been observed in other L2 contexts. They claimed that it indicated that universals of interlanguage syntax are at work.

The reason why little L1 interference was observed might be due to the proficiency level of the subjects selected and the tasks employed to elicit relative clauses in the previous studies. As Odlin (1990) states, nonstructural factors such as linguistic proficiency can affect the likelihood of transfer. L1 interference is more likely to occur in the target language of lower proficiency learners (Taylor, 1975). While Liu (1998) collected data from junior high school students whose proficiency levels were lower than those in other studies, the tasks employed such as grammaticality judgment might have inhibited L1 transfer due to the more conscious effort placed on the grammatical rule.

In addition, while the analysis of learners' production of English relative clauses from the composition data yields valuable insights on the acquisition of L2 relative clauses of Chinese learners, it is somewhat limited in that the researchers can only

examine the type of relative clause subjects produced in the composition. In order to have a better understanding of Chinese learners' acquisition of English relative clauses, aside from the composition data, this study also employed the multiple-choice grammar test to measure learners' knowledge of relative clauses.

METHODS

Subjects

A total of 237 English major students participated in the study. Participants in this study had studied English for at least six years since English was a required subject from 7th grade up for this generation. The instruction on relative clauses is generally given around the second year of their formal English education (i.e., 8th grade) in Taiwan. While it is certain that all the participants had received instruction on relative clauses, how well each participant learned may have varied.

Data collection

Each of the subjects was first given a 44-item-multiple-choice grammar test relating to relative clauses in order to obtain learners' receptive knowledge about English relative clauses. Test items, including relative clause structures containing relative pronouns functioning as the subject, object, the object of a preposition, and possessive, were selected from the *Understanding and Using Grammar* workbook by Azar (1999). In addition, items involving the reduction of the relative clauses and the use of *where* and *when* in relative clauses were included. After the grammar test, subjects were asked to write a composition in order to obtain information concerning

learners' productive knowledge of the English relative clauses. Subjects were given 80 minutes to finish both tasks.

Data analysis

For the multiple-choice test, the accuracy rate of each item was calculated.

Composition data were analyzed in terms of: 1) the total number of relative clauses in each pattern, and 2) the type of errors produced in each pattern of relative clauses.

Identification of the errors in the composition was done by a native speaker of English who held a master's degree in Linguistics.

FINDINGS AND DISCUSSION

A. Composition data

As can be seen in Table 1, the variability among the subjects was great, with the shortest composition, 22 words; the longest, 211 words. The mean length of the composition was 112.89 words. Table 2 presents the number of relative clauses in learners' composition. It shows that relative clause does not seem to be a structure frequently used in Chinese learners' composition. 48.1% of the subjects did not employ any relative clauses in their composition. For those who did use relative clauses in their composition, the majority of them produced only one relative clause. This finding of the infrequent use of the relative clause in the English writing of Chinese learners parallels Schachter's observation (1974). She noted that learners might try to avoid relative clauses due to the difficulties arising from striking

differences between L1 and L2 relativization.

To understand whether Chinese learners of English tend to use a certain type of relative clause, the relative clauses subjects produced in their composition were further classified on the basis of the function of antecedent and the function of relative pronoun. Table 3 presents the total number of relative clauses in each pattern.

Contrary to the AH (accessibility hierarchy) prediction that subject relative clauses are easier to produce and understand than are object relatives, the results showed that object relatives (relative pronoun functions as the object) are used more frequently than subject relatives. In addition, the data also manifested that Chinese learners preferred to have relative clauses embedded in the matrix object position, which provides support for Kuno's Perceptual Difficulty Hypothesis (PDH). PDH predicts that regardless of the RC type, sentences with RCs embedded in the matrix subject position are more difficult than sentences with RCs embedded in the matrix object position. Izumi (2003) collected data from sentence combination tasks and also found support for the PDH.

Aside from the infrequent use of the relative clause, evidence for cross-linguistic influences was found in errors produced in learners' English relative clauses. For instance, one learner wrote, “* I can read many books I like or **buy I love books.**” The learner used relativization correctly only in the first part: “books I like.” The expression “**buy I love books**” in the second part of the sentence reflects Chinese

relative word order as illustrated in (1):

- (1) Mai wo ai de shu
 buy I love DE book
 “ buy the book I love”

Reexamination of this particular subject's composition reveals that this switching from producing target structure to L1-influenced structure occurred not only in this sentence but also elsewhere in the composition (see Appendix 1), which manifests the learner's incomplete control of the structure of relatives.

While this particular learner struggled with the mismatch between L1 and L2 head direction, other learners seemed to have worked out the head-initial properties of English, and yet encountered the problem of relative pronouns, as in (1)-(4).

- (1) * I have to earn enough much money, and then go ***the countries are cold*** with my family.
(2) * Everyone has some ***leisure activities wants to do***.
(3) * I think I will buy many new books or borrow ***some books of I would like to read*** from library.
(4) * The most of ***country where I want to go*** is Italy.
(5) * I can use the pool in my school, which is always opened to ***any students whom love swimming***.

Obviously, sentences (1)-(5) contain multiple grammatical errors. If attention is focused on the relative structure, sentences (1) and (2) reveal learners' awareness of the head-initial property of English and yet lack of knowledge regarding the need of relative pronouns. Different from sentences (1) and (2), sentence (3) demonstrates the learner's awareness of the need of a relative marker in the relative structure.

S/he, however, adopted the Chinese relative marker “de” and translated “de” into

English “of.” Chinese relatives have only one marker “de” for relativization. The problem is that the marker “de” also occurs in various structures of pronominal modification in Chinese, one of which is Chinese possessives as illustrated in (6). This may explain why this learner uses “of” as the relative marker in relative structure.

(6) yi-fu de yen-se
dress possessive marker color
“the color of the dress”

As with sentence (3), errors in sentences (4) and (5) involve the misuse of the relative pronoun. The range of learners' selection, however, was restricted to the possible relative pronoun in the target relative structure. To relativize in English, Chinese learners need to acquire knowledge about the head-initial property of English and the function of different relative pronouns, which might be challenging since their native language has only one relative marker.

More evidence of L1 transfer in Chinese learners' English relatives comes from the error of pronoun retention, as shown in sentences (7)-(9). In Chinese relatives, a pronoun is retained in all relativized positions except for subject position (Sadighi, 1994). This may explain the erroneous use of resumptive pronouns.

- (7) * I want to join the piano club where I could learn and enjoy **it**.
 (8) * There are some big places that we can play baseball on **it**.
 (9) * I have more leisure to do something I want to make **it**.

Errors of agreement in number and tense, which were due to the L1 influence though not directly related to relative clause formation, were also found in relatives

structures of learner's composition, as illustrated in sentences (10), (11) and (12).

(10) * I will start to learn how to take care myself and become **a real adult that have** own thought and own life.

(11) * I am **a person who love** reading

(12) * There were lots of leisure activities I want to do.

While structural accuracy is a crucial criterion used to evaluate learners' relative clause acquisition, the appropriateness of its use should not be overlooked when examining learners' relatives production. The similarity shared by relative clauses in sentences (13)-(16) is its inappropriate use. They were either crossed out or replaced with other expressions by the native speaker.

(13) * I did not have time to go mountain-climbing **that I love**.

(14) * Traveling was my favorite leisure activity **that I always wanted to do** during my high school years.

(15) * I will go to learn the paint in my free time and read the books **which are about art**.

(16) * I suddenly longed to learn one kind of wind instruments **which were called flute**.

B. Multiple-choice test data

Table 4 presents the accuracy rate of each test item in the multiple-choice test.

To analyze whether learners' performance reflects the difficulty level claimed in the accessibility hierarchy, the information presented in Table 4 was rearranged according to the relative clause types (i.e., Tables 5, 6, 7, 8). As can be seen in Tables 4-8, while learners' reception knowledge about relative clauses as elicited from multiple-choice items is not as straightforward as that elicited from grammaticality judgment tasks, the fact that none of the items on Oprep. relatives reached an

accuracy rate of 70% might indicate that the difficulty level of Oprep. relatives is higher than for object and subject relatives.

Analysis of the data indicated that learners' difficulty with Oprep. relatives may result from the relative pronoun selection, lack of the knowledge of the need for the preposition and difficulty in the identification of the antecedent which the RC modified. As illustrated in the following item analysis, more than 50% of the learners selected the wrong relative pronouns for Items 14 and 29. 55.9% of the learners might have characterized the antecedent "address" as place and, hence, have chosen the relative pronoun "where."

14. "Excuse me, but there is something about _____ immediately."

"Certainly."

A. which I must speak to you (**38.7%**) B. which I must speak to you about you (4.1%)

C. that I must speak to you about (4.1%) D. that I must speak to you (**53.1%**)

29. "Is this the address to _____ you want the package sent?"

"Yes."

A. where (**55.9%**)

B. that (16.7%)

C. which (**32.8%**)

D. whom (7.3%)

In addition to the relative pronoun selection, the analysis of learners' performance on items 13 and 17 indicates that lack of the knowledge concerning the need for a preposition results in the lower accuracy rate in the Oprep. relatives. Moreover, the greater distance between the antecedent and the relative clause is likely the source for the resulting erroneous relative clause structures, as in item 20.

13. "Is Dr. Brown the person _____ you wish to speak?"

"Yes, please."

A. that (13.8%) B. whom (**33.4%**) C. to that (3.6%) D. to whom (**49.4%**)

17. This movie _____ last night was terrific."

“What’s it about?”

A. I went (9.7%) B. I went to it (2.8%) C. I went to **(60.3%)** D. that I went **(27.1%)**

20. That book is by a famous anthropologist. It’s about the people in Samoa _____ for two years.

A. that she lived (15.4%) B. that she lived among them **(61.8%)**
C. among whom she lived **(11.8%)** D. where she lived among them **(11%)**

The variation, which exists in learners’ performance on the same type of relatives, indicates that learners’ performance on the relatives was affected by linguistic contexts. Learners’ performance on relative clauses using “when” also illustrated this point. There are two items on relative clauses using “when” (Table 8). One item involving the relative pronoun “when” had an accuracy rate of 78.5%, the other, 34.3%. The dramatic drop in accuracy rate of the latter item (i.e., item 26) is due to learners’ confusion about whether the preposition “on” should go with “day.” 34.3% of the subjects chose “B” without the preposition “on” and 32.7% chose “D” with the preposition “on.” While item 16 also includes distractors with the preposition “at,” the higher accuracy rate on item 16 shows that learners had better control of the preposition “at” than “on.”

16. “Why do you get up at 4:00 A.M.?”

“Because it’s the only time _____ without being interrupted.”

A. when I can work on my book **(78.5%)** B. when I can work on my book at **(9.3%)**
C. when I can work on my book them (2.4%) D. at when I can work on my book (9.7%)

26. “Is April twenty-first the day _____?”

“No, the twenty-second.”

A. You’ll arrive then (16.7%) B. when you’ll arrive **(34.4%)**
C. on that you’ll arrive (16.3%) D. when you’ll arrive on **(32.7%)**

Likewise, a comparison of learners’ performance on four items involving the genitive relative “whose” also indicates the linguistic context plays an important role

in learners' relative clause production. As shown in Table 8, the accuracy rates of the four "whose" items are high (i.e. above 80%) except for item 25. The variability in learner's performance of the four items may result from the difference in the relative clauses embedded in different matrix positions. Items 15, 31 and 43, which have higher accuracy rates, are sentences with RCs embedded in matrix object position, while item 25 is a sentence with RC embedded in matrix subject position. Hence, the lower accuracy rate on item 25 lent support to Kuno's Perceptual Difficulty Hypothesis, which holds that sentences with RCs embedded in the matrix subject position are more difficult than sentences with RCs embedded in the matrix object position.

CONCLUSIONS

This study investigates the extent to which the differences between Chinese and English relativization affect the acquisition of Chinese learners of English. Contrary to Liu's (1998) study, which observed little L1 interference in the process of second/foreign language acquisition, the results showed that several errors in the composition data could be attributed to L1 transfer. Aside from the L1 influence, the finding that learners prefer the relative clause embedded in the matrix object position indicates the universal principles are at work. In other words, L1 transfer works in conjunction with the universal constraints in learners' interlanguage development. While the results from the multiple-choice test data were not as straightforward as

those from more commonly used elicitation tasks such as sentence-combining and grammaticality judgments, the findings show that forming an accurate relative clause requires more knowledge than just about which relative pronoun to use.

Appendix 1

I like **reading books I love** but I had not leisure time to read them during high school years. I was always preparing for every exam and I could only read the textbooks that teachers help. At that time, we must stay school all the time. We had no holiday and leisure beside sleeping time and eating time. So I had no time to **read my love books** during high school years.

Now I attend a college and I have more leisure time to use in my way. When I have time, I will go to bookstores or library. I can **read many books I like or buy I love books**. I will read and read at every time I can do it. I am interested in reading books. When I read, I am happy. So I will get more time to read books.

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Table 1. Descriptive statistics of learners' composition

Mean	Low	High	SD
112.89	22	211	32.57

Table 2. Total number of relative clauses in learners' composition

The number of relative clauses in a composition	0	1	2	3	4	5
Total number of subjects (%)	114 (48.1%)	76 (32.1%)	35 (14.8%)	7 (3.0%)	3 (1.3%)	2 (0.8%)

Table 3. Classification of the type of relative clause produced in compositions

Function of antecedent (Matrix position)	Function of relative pronoun	Total number of RC	Total number of correct RC
Subject	Subject	3	1
Subject	Object	23	13
Object	Subject	65	18
Object	Object	92	41
Object	Oprep	4	2
Object	Gen	2	0

Table 4. Item analysis of learners' performance in the multiple-choice test

Item	1	2	3	4	5	6	7	8	9
RC type	Those who	Su(d)	Su	Su(d)	where	Su	Su	Su	Su(d)
Accuracy rate %	91.1	65.6	56.3	37.4	85.8	66.3	88.6	85.8	54.7

Item	10	11	12	13	14	15	16	17	18
RC type	O	O prep.	Su	O prep.	O prep.	whose	when	O prep.	O
Accuracy rate %	53.8	52.4	55.1	49.4	38.7	91.5	78.5	60.3	78
Item	19	20	21	22	23	24	25	26	27
RC type	Su(d)	O	Su(d)	O	Su	Su	whose	When	Su(d)
Accuracy rate %	61.8	11.8	69	82.2	80.9	82.6	45.9	34.3	53
Item	28	29	30	31	32	33	34	35	36
RC type	O	O prep.	Su	whose	Su	Su	Su	O prep.	Su
Accuracy rate %	60.8	32.8	78.5	90.3	66.3	48.3	89.1	61.8	63.8
Item	37	38	39	40	41	42	43	44	
RC type	where	Those who	Su	Su	Su(d)	Su(d)	Whose	O prep.	
Accuracy rate %	84.1	89	62.8	53.1	81	93.1	80.9	66.8	

Table 5. Learners' performance in subject relative clauses

RC type	Subject RC													
Item	3	6	7	8	12	23	24	30	32	33	34	36	39	40
	SS	OS	SS	SS	CS	OS	OS	OS	CS	OS	SS	SS	CS	OS
%	56.3	66.3	88.6	85.8	55.1	80.9	82.6	78.5	66.3	48.3	89.1	63.8	62.8	53.1

Table 6. Learners' performance in subject-deletion relative clauses

RC type	Subject RC (deletion of subject relative pronoun)							
Item	2	4	9	19	21	27	41	42
%	65.6	37.4	54.7	61.8	69	53	81	93.1

Table 7. Learners' performance in object and Oprep. relative clauses

RC type	Object RC				O prep. RC							
Item	10(d)	18(d)	22(d)	28(d)	11	13	14	17	20	29	35	44
%	53.8	78	82.2	60.8	52.4	49.4	38.7	60.3	11.8	32.8	61.8	66.8

Table 8. Learners' performance in relative clause type using *those*, *whose*, *where* and *when*

RC type	Those who		Genitive (Whose)				Where		When	
Item	1	38	15	25	31	43	5	37	16	26
%	91.1	89	91.5	45.9	90.3	80.9	85.8	84.1	78.5	34.3